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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,889	11/04/2003	Michael P. Belyansky	FIS920030286US1	2888

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EXAMINER	
PHAM, LONG	

ART UNIT	PAPER NUMBER
2814	

DATE MAILED: 02/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/605,889	BELYANSKY ET AL.	
	Examiner	Art Unit	
	Long Pham	2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) *21-30* is/are withdrawn from consideration.

5)☒ Claim(s) *8-20* is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Rejections and/or objections necessitated by the amendments

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 2, 3, 4, 5, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art (AAPA) of this application in combination with Harms et al. (US 4,994,141), and Ajmeria et al. (US 2003/0010972).

With respect to claims 1 and 4, AAPA teaches a method of relaxing a stress present in a film contacting a base layer by reducing the stress of the film. See the Background of the Invention of this application.

However, AAPA fails to teach the reduction of stress is done by oxidizing the film by applying heat.

Harms et al. teach reducing stress of a film by oxidation by applying heat. See col. 3, lines 1-25.

It would have been obvious to one of ordinary skill in the art of making semiconductor devices to reduce the stress of the film as taught by Harms et al. in the method of AAPA because the reduction method of Harms et al. can be reproducible. See col. 3, lines 1-25.

Further with respect to claims 1 and 4, Harms et al. teach that oxidation is done by applying heat but fail to teach that oxidation is done by using heat and atomic oxygen.

Ajmeria et al. teach oxidizing by applying heat and atomic oxygen to reduce the thermal budget of oxidation process. See [0014].

It would have been obvious to one of ordinary skill in the art of making semiconductor devices to use heat and atomic oxygen to produce oxidation in the process of AAPA and Harms et al. to achieve the above advantage.

With respect to claim 2, AAPA further teaches the stress is either tensile or compressive. See the Background of the Invention of this application.

With respect to claim 3, Ajmeria et al. fail to teach that the atomic oxygen is generated by high density plasma.

However, the generation of atomic oxygen by high density plasma is well-known.

Further with respect to claim 3, it is submitted that the temperature range for the generation of atomic oxygen is optimizable.

With respect to claims 5 and 7, AAPA further teaches selectively reducing the stress of the film and Harms et al. teaches reduction by oxidation.

It would have been obvious to one of ordinary skill in the art of making semiconductor devices to selectively oxidize the film to selectively reduce the stress of the film to obtain advantages as described in the Background of this specification.

With respect to claim 6, AAPA and Harms et al. fail to teach annealing the oxidized film.

However, the annealing of a film is well-known to one skilled in the art of making semiconductor devices.

Further, since AAPA in combination with Harms et al. teach the claimed oxidized film, additional heating of the film would not change the stress of the film.

Response to Arguments

3. Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection.

In response to the applicants' arguments in the paragraphs on pages 3 and 4 of the response dated 11/22/04, it is submitted that line 5 of [0007] of the Background of the Invention of this application teaches altering (reducing or increasing) stress of a layer contacting a base layer. Further, it is submitted that reducing stress means relaxing stress.

Allowable Subject Matter

4. Claims 8-20 are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Long Pham whose telephone number is 571-272-1714. The examiner can normally be reached on M-F, 7:30AM-3:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Long Pham